Jakarta Climate Adaptation Tools (JCAT)

IVM Institute for Environmental Studies

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Background

DeltAlliance

Knowledge for Climate

- To contribute to scientific knowledge and the development of methods and tools to assess flood risk in Jakarta

Traditional flood management

Flood risk management

RISK

Exposure X **Hazard** X **Vulnerability**

the location of people or economic assets in hazard-prone areas

hazardous phenomena such as flooding

susceptibility (of exposed units) to suffer damage or loss

Examples of flood risk management

Examples of flood risk management

JCAT: PhDs at the core

Research theme 1 – Yus Budiyono

to develop methods to assess the impacts of climate change and other changes on flood risk in Jakarta

Research theme 2 – Pini Wijayanti

- to develop methods to assess the economic costs and benefits of alternative options for adaptation and flood risk management in Jakarta

JCAT: main goals

- To develop and improve methods and tools for assisting in decision-making on flood risk adaptation
  - > Use tools to assess impacts of physical and socioeconomic changes on flood risk
  - > Use tools to assess potential of several adaptation strategies to reduce flood risk
- To contribute knowledge and capacity building
- To disseminate results to stakeholders in Jakarta, and more broadly to scientists and practitioners worldwide

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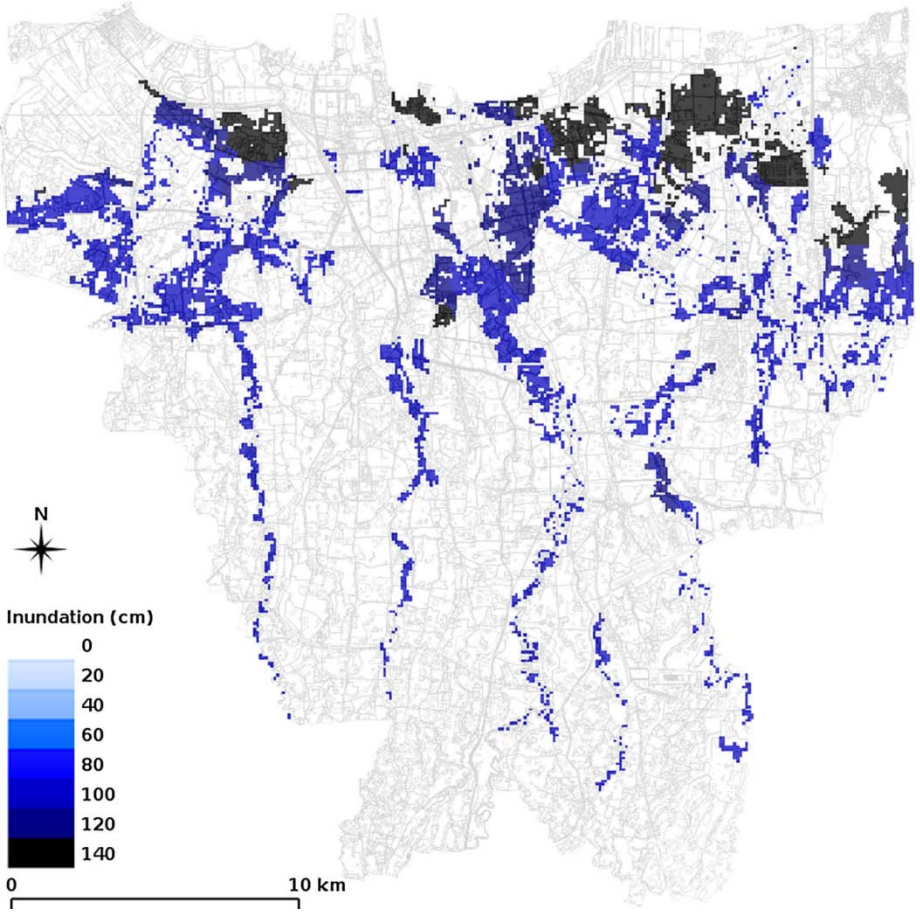
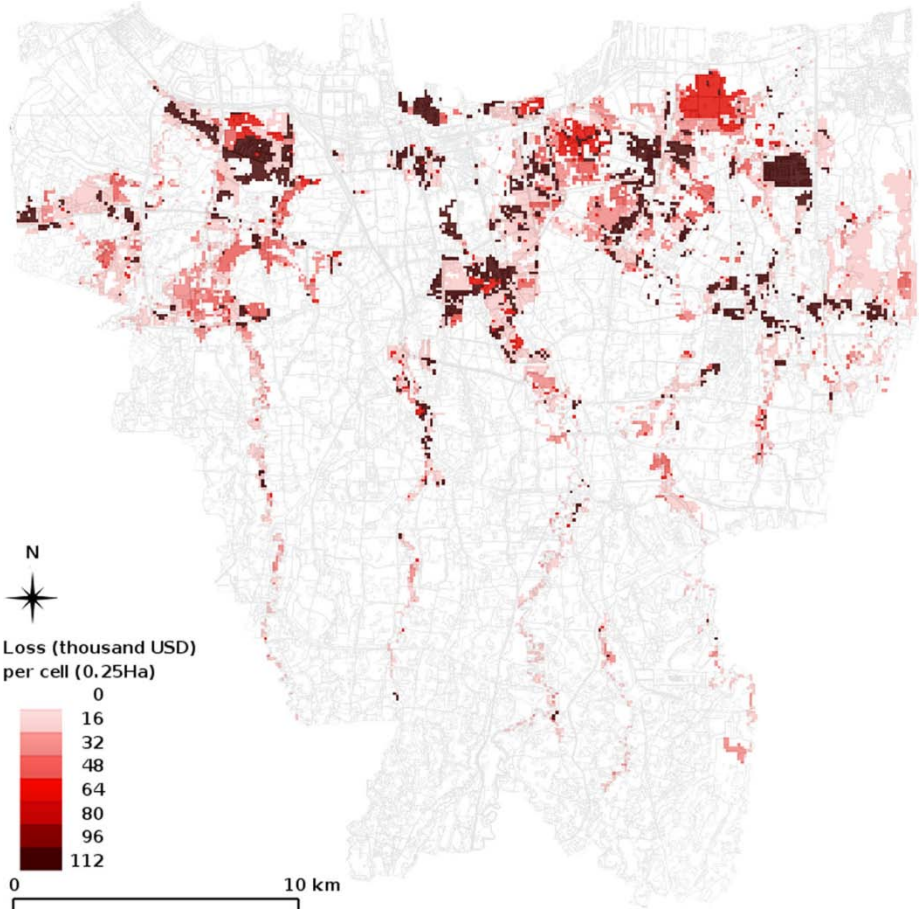
Damagescanner-Jakarta

River flood risk assessment tool for Jakarta

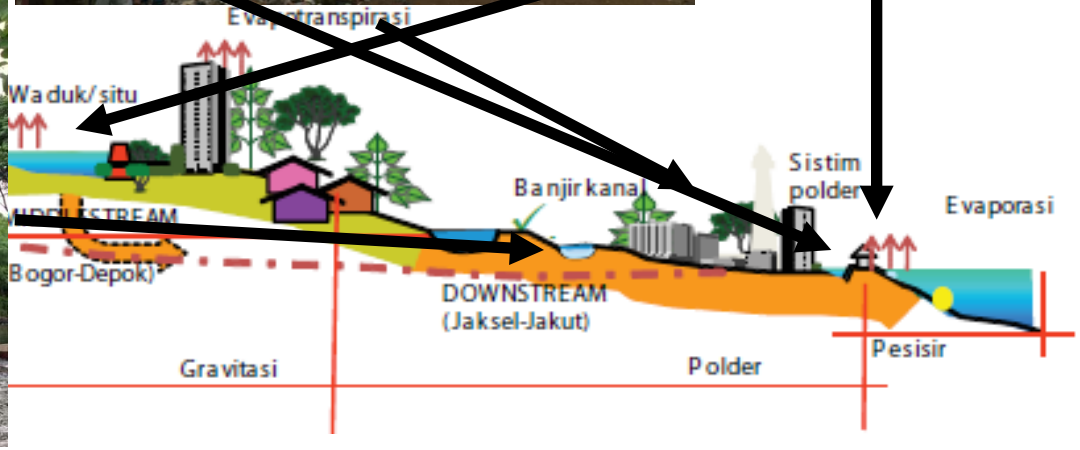




Contact: yus.budiyono@bppt.go.id / yus.budiyono@vu.nl

Economic assessment tools

Assess costs and benefits of different adaptation options



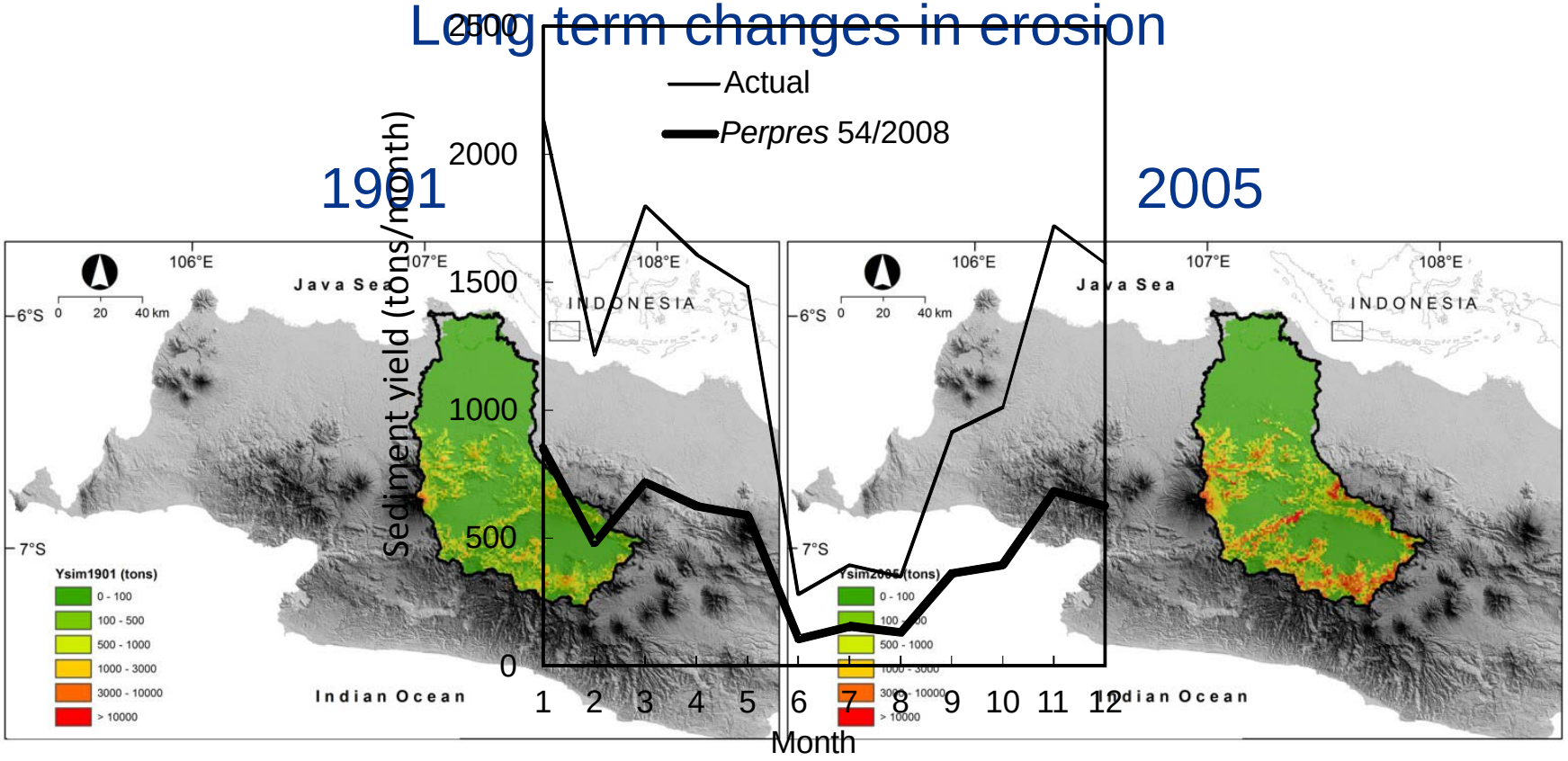
Contact: pini.wijayanti@wur.nl

STREAM and SDAS

Water balance and sediment and erosion models

Effects of policy measures

Long term changes in erosion



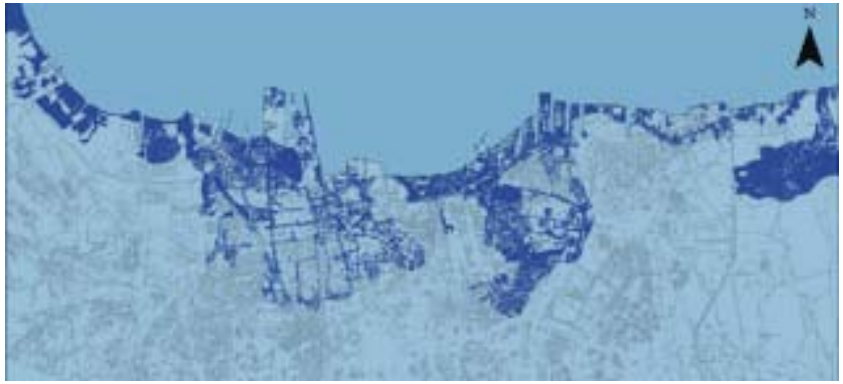
Contact: poerbandono@gd.itb.ac.id

Coastal flood exposure

Economic exposure to coastal flooding in Jakarta

100 year coastal flood extent

Current flood extent

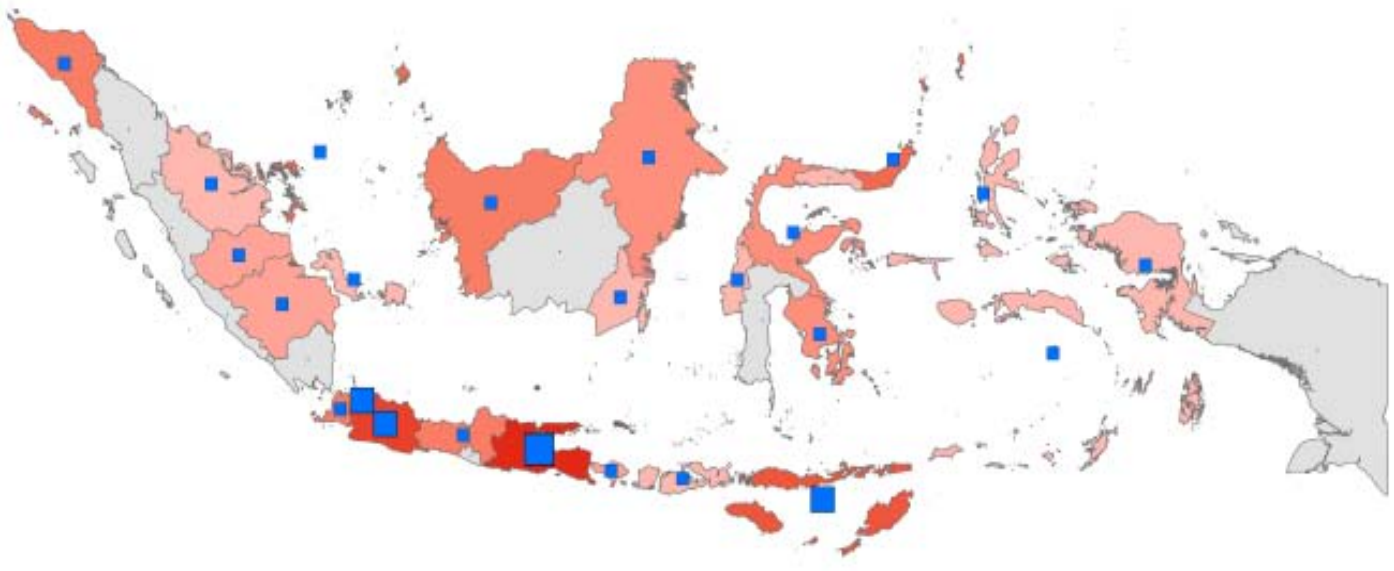


2100: SLR & subsidence

Contact: arismarfai@gadjahmada.edu

National flood risk assessment tool

Rapid tool for coastal and river flood risk mapping in Indonesia



Annual expected damage
(million USD/yr)

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Scientific knowledge

Nat Hazards
DOI 10.1007/s11069-014-1327-9

ORIGINAL PAPER

Flood risk assessment for delta mega-cities: a case study of Jakarta

Yus Budiyono · Jeroen Aerts · JanJaap Brinkman · Muh Aris Marfai · Philip Ward

Nat Hazards (2014) 73:507–530
DOI 10.1007/s11069-014-1083-x

ORIGINAL PAPER

Assessment of the effects of climate and land cover changes on river discharge and sediment yield, and an adaptive spatial planning in the Jakarta region

Poerbandono · Miga M. Julian · Philip J. Ward

Nat Hazards (2011) 56:899–916
DOI 10.1007/s11069-010-9599-1

ORIGINAL PAPER

Coastal inundation and damage exposure estimation: a case study for Jakarta

P. J. Ward · M. A. Marfai · F. Yulianto · D. R. Hizbaron · J. C. J. H. Aerts

Environmental Politics, 2013
Vol. 22, No. 3, 518–536, http://dx.doi.org/10.1080/09644016.2012.683155

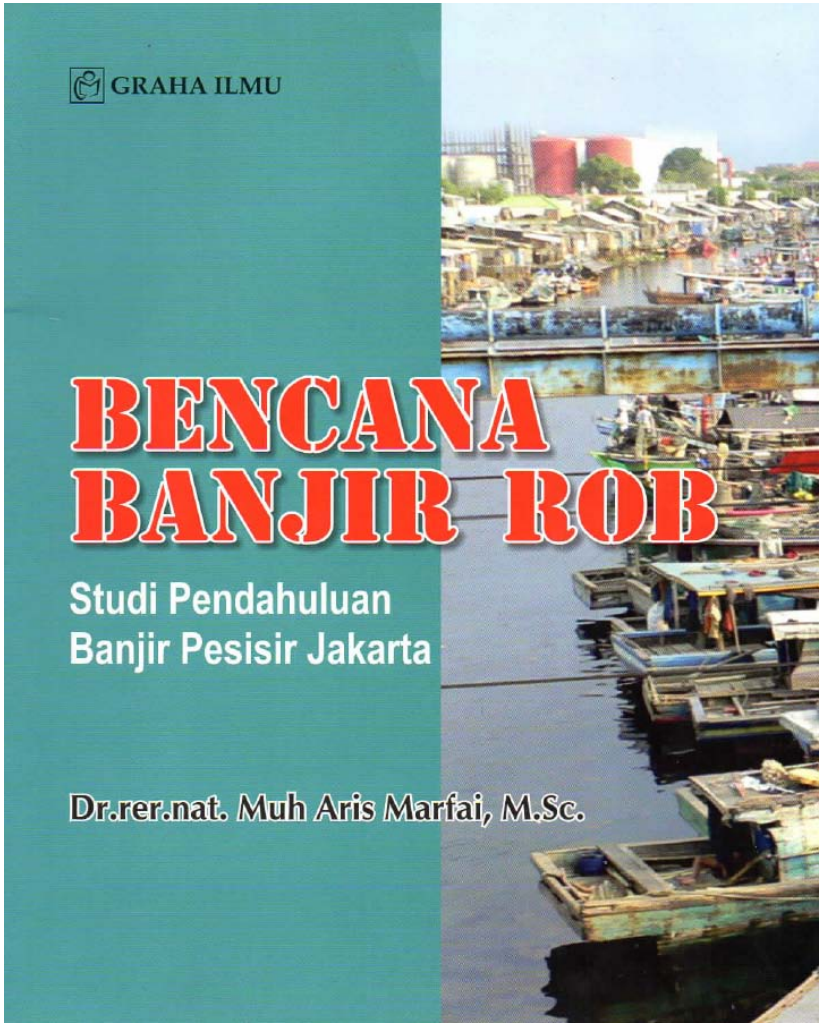
Routledge
Taylor & Francis Group

Governance of flood risk management in a time of climate change: the cases of Jakarta and Rotterdam

P.J. Ward[a,b]*, W.P. Pauw[a,c], M.W. van Buuren[d] and M.A. Marfai[e]

- 2 more submitted ; 4 more in preparation

Teaching



- 2 Indonesian PhD candidates
- 1 Dutch PhD candidates
- MSc. & BSc. projects in Indonesia and the Netherlands
- JCAT methods in regular teaching at UGM Yogyakarta & ITB-Bandung

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Workshops


WORLD DELTA S
The Pulse of Deltas and the Fate of our
DELTA SUMMIT Jakarta 2011
" Jakarta Toward Adapt
Management of Delta


THE 5th AMCDRR
The 5th Asian Ministerial Conference on Disaster Risk Reduction
Yogyakarta, 22-25 October 2012
"Strengthening Local Capacity for Disaster Risk Reduction"
www.5thamcdrr-indonesia.net
Organized by:
In collaboration with:
UNISDR
Supporting Partners:
USAID
Australian AID
GFDRR

Books and reports

Munich RE

JCAT tools presentations

1. Yus Budiyono: Damagescanner-Jakarta
2. Pini Wijayanti: Economic tools
3. Prof. Aris Marfai: Coastal flood exposure tool
4. Dr. rer. nat. Poerbandono: SDAS
5. Discussion

Terima kasih!

- Contact:

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